

### NORDIC ELECTRICITY MARKET

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#### BEARISH MARKET INDICATED BY BOTH FUNDAMENTALS AND TECHNICAL ANALYSIS

##### Forecast to week 51:

ENOFUTBLQ1-20	📉 Bearish (<0%)
ENOYR-20	📉 Bearish (<0%)
NP System	📈 Bullish (>0%)
NEDEC9	📉 Bearish (<0%)

#### FORECAST TO WEEK 51

#### ELECTRICITY DERIVATIVES

##### Front quarter

The weather type is mild for the time of year but drier than normal. Precipitation rates are forecast to be above normal during this weekend only. For the time being, however, there is no permanent turn in sight for a drier and colder period. The hydro balance increase has halted at a level slightly below normal. The weakness of the fuel market is also reflected in quarterly products. We expect the fall of quarterly products to halt with the current weather forecasts, albeit with a slight bearish effect provided by fuels.

##### Annual products

The hydro balance has risen to a level close to normal, but the pressure created by the weather forecasts has ended for now. There has been major movement in the emission allowance market, and the market is currently bearish. The price of coal and the German electricity market are also bearish and technically very weak. The broad European weather picture is quite mild, which keeps the demand for fuels more subdued than normal. We expect annual product prices to fall due to the downward pressure maintained by fuels.

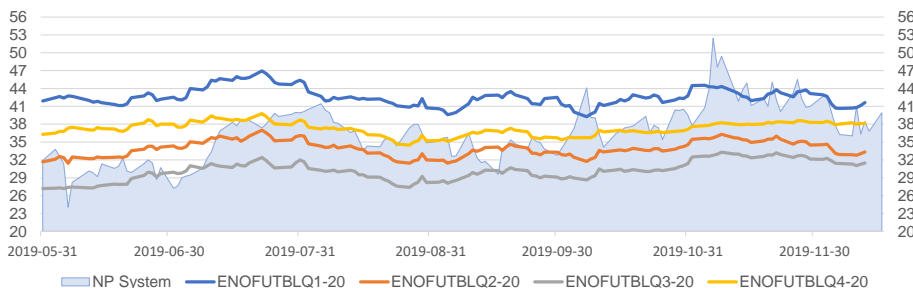
#### SPOT MARKET

Nordic wind power production will mainly be weak in the current week. At its highest wind power output will at the normal level on Wednesday, but for the rest of the week the forecast is for rates below normal. The weather is clearly milder than normal for the time of year. The Forsmark 2 unit should be operational again today. Flow rates are decreasing, remaining slightly lower than normal and falling. The mild weather keeps consumption rates lower than normal for the time of year. We expect the system price to rise at the weekly level and to settle at an average of €39.0/MWh. We expect the Finnish area price to also rise as wind power production is weak and to settle at an average of €43.5/MWh.

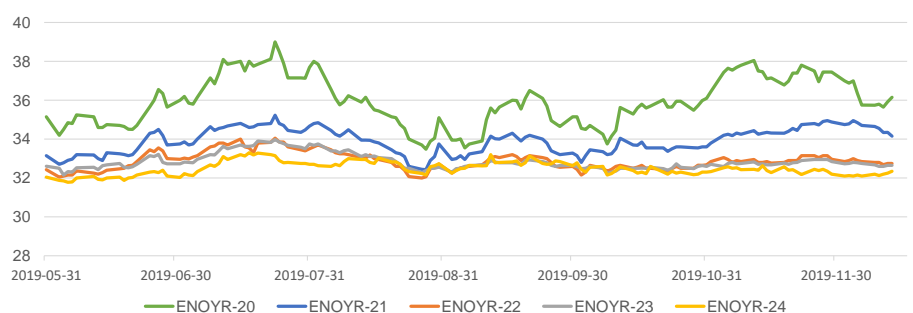
#### EMISSIONS

The broad European weather picture is still quite mild and the price of natural gas has been falling, which is why the demand outlook for emission allowances is subdued. Movement in emission allowance prices has been created by Thursday's UK election, even though the result was as expected. The consequence, i.e. Brexit with a deal, has also been the most expected outcome for a long time. COP 25 ended in a disappointment in Madrid and may have a slight impact on countries' willingness to make their own emission targets stricter before next year's conference. After today, there will be no auctions until January 7, 2020. We expect emission allowance prices to remain at the current level.

Quarters EUR/MWh (left), NP System EUR/MWh (right)



Years EUR/MWh



##### Market signals

	spot	Q1-20	YR-20
Hydrologic balance	→	→	→
Precipitation forecast	↑	↑	↑
Temperature forecast	↓	↓	↓
Spot	→	→	→
Production and transmission exch.	↓	→	→
Emissions allowance	↓	↓	↓
Coal price	↓	↓	↓
German prices	↓	↓	↓
Technical analysis	→	↑	→

Product	Date	Value	% chg	Chg (EUR)
ENOFUTBLQ1-20	13.12.2019	41.65	2.3%	0.95
ENOFUTBLQ2-20	13.12.2019	33.35	0.8%	0.27
ENOFUTBLQ3-20	13.12.2019	31.48	0.2%	0.05
ENOFUTBLQ4-20	13.12.2019	38.13	0.6%	0.23
ENOYR-20	13.12.2019	36.15	1.1%	0.40
ENOYR-21	13.12.2019	34.15	-1.6%	-0.55
ENOYR-22	13.12.2019	32.75	-0.3%	-0.10
ENOYR-23	13.12.2019	32.65	-0.3%	-0.10
ENOYR-24	13.12.2019	32.35	0.8%	0.25
NEDEC9	13.12.2019	24.00	-3.4%	-0.85
NEDEC20	13.12.2019	24.16	-3.6%	-0.90

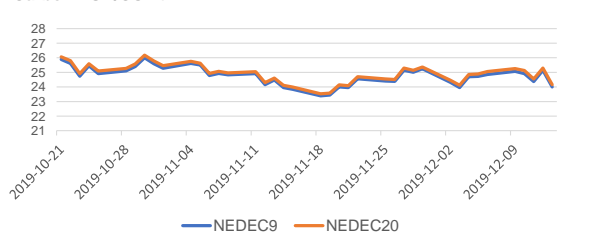
##### EPAD settlements

13.12.2019 (€/MWh)	2020	2021	2022	2023
SYHEL	7.60	3.80	3.33	3.35
SE1-NP System	-1.00	-1.50	-2.25	-2.25
SE2 - NP System	-1.00	-1.50	-2.25	-2.25
SE3 - NP System	1.33	1.25	1.35	1.35
SE4 - NP System	3.25	2.60	2.60	2.60

##### Week's spot price change

Price area (€/MWh)	Date	Value	% chg	Chg (EUR)
NP System	15.12.2019	36.89	-3.9%	-1.50
NP Area FI	15.12.2019	37.83	-6.4%	-2.59
NP Area SE1	15.12.2019	34.80	-3.6%	-1.31
NP Area SE2	15.12.2019	34.80	-3.6%	-1.31
NP Area SE3	15.12.2019	36.09	-6.0%	-2.30
NP Area SE4	15.12.2019	36.09	-6.0%	-2.30

##### Carbon EUR/CO2 t



COMMENTS ON WEEK 50

**ELECTRICITY DERIVATIVES**

**Front quarter**

Last week, quarterly products opened bearish following a strong decline the week before but took an upturn towards the end of the week as precipitation forecasts dried slightly. The rise was accelerated by a slight turn in fuel prices and the rise of emission allowances towards the end of the week. At the weekly level, however, the change was quite moderate as the gain was below €1/MWh.

**Annual products**

The front-year product also opened bearish on Monday last week, in line with the fall seen a week earlier, but took a slight upturn over the week in the same way as the front quarter. The lowest annual product quote was seen with the very first trade on Monday and the highest one at the Friday opening when emission allowances climbed momentarily to almost €26/t. In the end, the change for annual products at the weekly level turned out to be a gain of less than €0.5/MWh. On the other hand, further-ahead annual products as a general rule fell with the decline of coal.

**SPOT MARKET**

Nordic wind power production was very high last week, except for Tuesday morning, and record output exceeding 15,000 MW was seen on Wednesday. In addition, the week was very mild and, thanks to the heavy rainfall of the first days of the week, flow rates were higher than normal for the time of year during the first days of the week. At the weekly level, the system price settled low for the time of year at €37/MWh and dropped clearly from the week before. The Finnish area price plummeted on Monday and Wednesday during the nighttime hours due to high wind power output and low consumption. At the weekly level, the area price difference fell to a level below €1/MWh.

**EMISSIONS**

Last week, emission allowance prices were highly volatile and ranged between €24 and €26/t, with the extremes seen during Friday. In the early part of the week, emission allowances reacted to falling fuels before correcting back to a level above €26/t on Thursday. When the UK election results were out, emission allowance prices rose momentarily to a level close to €26/t but ended up falling again at the end of Friday to a level close to €24/t.

Indicator	ENOFUTBLQ1-20	ENOYR-20
Coal-fired production	34 %	9 %
Coal price	13 %	2 %
Gas price (NBP)	10 %	0 %
German price level	21 %	38 %
Spot	10 %	21 %
Crude oil Brent	18 %	23 %
Water reservoirs	0 %	3 %
EUR/USD FX rate	10 %	9 %
Temperature	8 %	5 %
Precipitation	16 %	13 %

**Definition**  
The above figures measure the ability of market determinants to describe the price changes occurred in last 6 months. The affect is measured as Coefficient of Determination\*. Each variable is evaluated independently. We use a color scale to demonstrate efficacy, green (strong), yellow (moderate), red (weak)

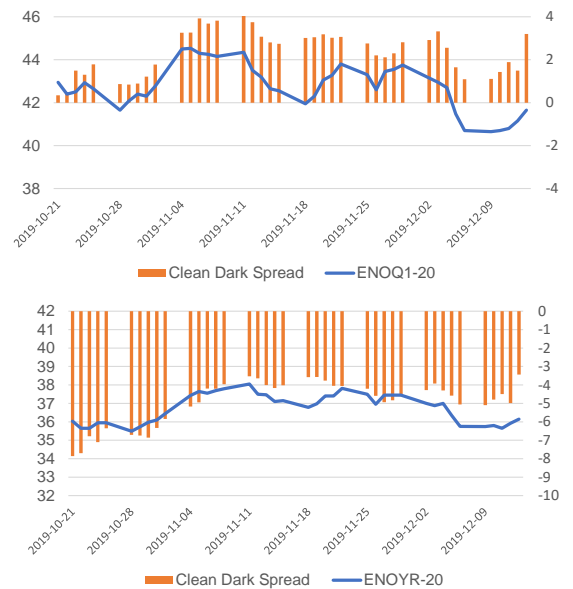
Forecast history	50	Chg	49	Chg
ENOFUTBLQ1-20	↘	2.3%	↘	-7.0%
ENOYR-20	↘	1.1%	↘	-4.5%
NP System	↘	-3.9%	↘	-11.5%
NEDEC9	↘	-3.4%	↘	-1.6%

DETERMINANTS AFFECTING THE MARKET ON WEEK 51

**RESTRICTIONS IN PRODUCTION AND TRANSMISSION CAPACITY**

Ringhals 2 (852 MW), maintenance 7.9.-30.12.2019, in use 300 MW  
Forsmark 2 (1118 MW), failure 2.-16.12.2019, in use 504 MW

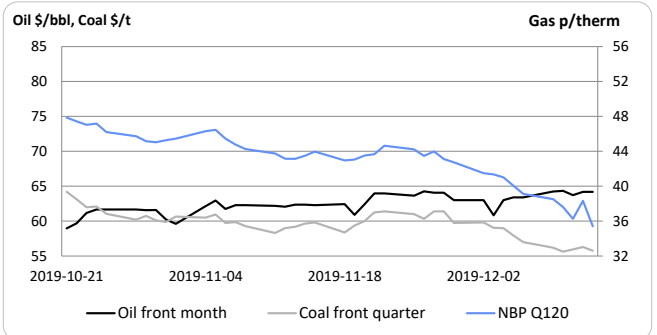
- Nordic nuclear power plants are currently operating at a capacity utilization rate of 90%
- RU-FI transmission profile varies due to capacity payments, average imports from Russia last week were 43% of the maximum



**AVERAGE SPOT PRICE AND EPAD**

Price area (€/MWh)	2012	2013	2014	2015	2016	2017	2018	2019*
NP System	31.20	38.10	29.60	21.00	26.91	29.41	43.99	39.08
NP Area FI - NP System	5.50	3.10	6.40	8.70	5.54	3.78	2.81	5.27
NP Area SE1 - NP System	0.50	1.10	1.80	0.20	2.04	1.43	0.24	-0.99
NP Area SE2 - NP System	0.60	1.10	1.80	1.00	2.04	1.43	0.24	-0.99
NP Area SE3 - NP System	1.10	1.40	2.00	1.00	2.33	1.83	0.55	-0.55
NP Area SE4 - NP System	3.00	1.80	2.30	1.90	2.62	2.77	2.37	0.94

\*Average for period between 1.1.2019-16.12.2019.



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